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**Declaration under Rule 4.17:**

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a patent (Rule 4.17(ii)) for the following designations AE,  
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,  
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KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
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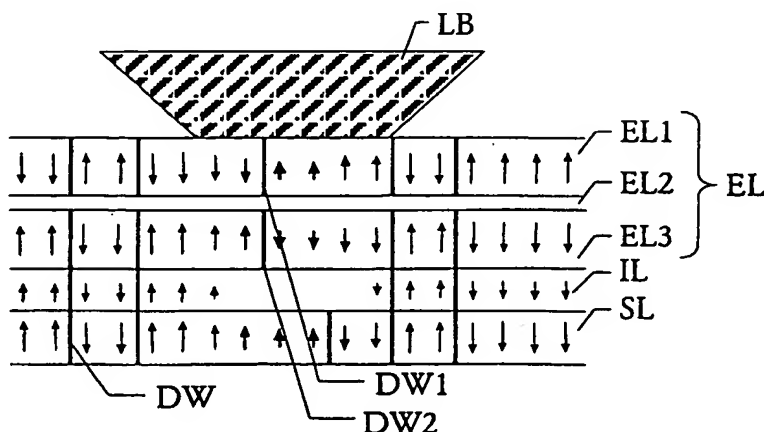
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ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: **MAGNETO-OPTICAL RECORDING MEDIUM WITH ANTI-FERROMAGNETICALLY COUPLED DOMAIN-EX-  
PANSION DOUBLE-LAYER STRUCTURE**



(57) Abstract: A magneto-optical recording medium and manufacturing method for such a medium, wherein a readout expansion layer (EL) consisting of a double- or bi-layer structures with anti-ferromagnetic layers, e.g. GdFeCo or TbFeCo, coupled over a relatively thin non-magnetic metallic layer, e.g. a Ru layer. Under influence of the temperature rise by the focussed spot of a readout radiation beam and the stray field from a storage layer (SL), the magnetization in the double-layer will switch from an anti-parallel to a parallel state. A main advantage of this layer structure is that it offers a symmetric readout response for up and down magnetization in the storage layer (SL) and can in principle be used without external readout field.

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# INTERNATIONAL SEARCH REPORT

Application No  
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A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G11B11/105

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, IBM-TDB

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 756 202 A (VAN KESTEREN HANS W ET AL) 26 May 1998 (1998-05-26) cited in the application the whole document	1
A	US 6 150 038 A (HIROKANE JUNJI ET AL) 21 November 2000 (2000-11-21) the whole document	1

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- \*&\* document member of the same patent family

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Application No  
PCT/IB 03/02866

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>AWANO H ET AL: "MAGNETIC DOMAIN EXPANSION READOUT FOR AMPLIFICATION OF AN ULTRA HIGH DENSITY MAGNETO-OPTICAL RECORDING SIGNAL" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 69, no. 27, 30 December 1996 (1996-12-30), pages 4257-4259, XP000955335 ISSN: 0003-6951 cited in the application the whole document</p>	1
A	<p>OH S C ET AL: "ENHANCED EXCHANGE COUPLING CONSTANT AND THERMAL STABILITY OF ANTIFERROMAGNETICALLY COUPLED MEDIA WITH THIN CO INTERLAYERS" JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 91, no. 10, PART 3, 15 May 2002 (2002-05-15), pages 8617-8619, XP001115634 ISSN: 0021-8979 the whole document</p>	1
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A	<p>SHAN Z S ET AL: "EFFECTS OF INSERTING THIN CO LAYERS ON THE MAGNETIC AND REVERSAL PROPERTIES OF SYNTHETIC ANTIFERROMAGNETICALLY COUPLED MEDIA" JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 91, no. 10, 15 May 2002 (2002-05-15), pages 7682-7684, XP001115137 ISSN: 0021-8979 the whole document</p>	1

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>CHEKANOV A ET AL: "FLUCTUATION FIELD AND TIME DEPENDENCE OF MAGNETIZATION IN TBFeCO AMORPHOUS RARE EARTH-TRANSITION METAL THIN FILMS FOR PERPENDICULAR MAGNETIC RECORDING"</p> <p>JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 90, no. 9, 1 November 2001 (2001-11-01), pages 4657-4663, XP001124406</p> <p>ISSN: 0021-8979</p> <p>the whole document</p> <p>-----</p>	1

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